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Edward G. Keating, Susan M. Gates, Jennifer E. Pace, Christopher Paul, Michael G. Alles

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Prepared for the Defense Finance and Accounting Service

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Preface

During the summer of 1999, the Defense Finance and Accounting Service (DFAS) engaged RAND to examine DFAS's interactions with customers and to determine how those interactions might be improved.

DFAS was created in 1991 when the accounting and finance operations specific to each branch of the military were merged. Today, DFAS provides a variety of finance and accounting services to military customers.

This research grew out of earlier work that RAND undertook for DFAS leadership. That earlier work, discussed in Keating and Gates (1999), focused on DFAS's internal cost structure and the implications that cost structure held for DFAS pricing policies. The logical next step was to look externally, at an area DFAS knew to be problematic: its interactions with its customers.

This research was conducted for DFAS within the Forces and Resources Policy Center of RAND's National Defense Research Institute, a federally funded research and development center sponsored by the Office of the Secretary of Defense, the Joint Staff, the unified commands, and the defense agencies.

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Background

This work grew out of earlier research that RAND conducted for Defense Finance and Accounting Service (DFAS) leadership. That earlier work, discussed in Keating and Gates (1999), focused on DFAS's internal cost structure and the implications that cost structure held for DFAS pricing policies. Because that research focused internally, the logical next step was to focus externally, on the interactions DFAS has with its customers. The scope of the research was deliberately broad; DFAS had received customer complaints, but wanted RAND to take a comprehensive look at all of its customer interactions without preconceived ideas about where the problems lay.

DFAS Today

DFAS provides a range of services to the Army, Navy, Air Force, Marine Corps, and other Department of Defense (DoD) agencies. DFAS services fall into two broad categories: finance "output" and accounting services. Finance outputs include issuing paychecks for contractors, military personnel, retirees, and DoD civilians, as well as processing and paying travel expenses. Accounting services include tabulating and analyzing DoD budget, obligation, and disbursement data, and the execution of payments.

DFAS is headquartered in Arlington, Virginia. Five "regional centers" report to the headquarters and 19 operating locations (OPLOCs) report to the regional centers. Prior to the 1991 formation of DFAS, each regional center was a stand-alone finance and accounting center dedicated to one large DFAS customer.

As we discussed elsewhere (Keating and Gates, 1999), DFAS generates revenue by charging customers for services rendered. The prices for these services are linear, with no quantity discounts, so DFAS revenue increases in direct proportion to workload and doubling workload doubles revenue.

DFAS has changed its price structure in recent years. Customers who utilize more automated approaches get discounts. More controversially, DFAS now bills for accounting services by the hour, rather than charging a fixed price per active account. Some of the customers we talked to were concerned about this

practice, suggesting that it provides limited incentive for DFAS to operate efficiently.

DFAS customers are either working capital fund (WCF) customers (entities like DFAS that must raise revenue from customers) or appropriated fund (or "warfighting") customers. WCF customers get their own DFAS bills and are responsible for paying them. On the other hand, bills to appropriated fund customers are highly aggregated and are paid by their headquarters.

Methodology

The RAND methodology was to collect information from interviews and data analysis and from this information draw insights that would lead to concrete recommendations for improving DFAS interactions with its customers.

We began by interviewing DFAS personnel at DFAS headquarters, at two regional centers, and at two OPLOCs. We attempted to select for these interviews employees who have considerable breadth and depth of experience in the organization.

When we interviewed DFAS customers, we began by visiting customer personnel at the headquarters level. Then we visited subordinate organizations and locations and interviewed command- and installation-level personnel who were identified as particularly knowledgeable by their peers or by DFAS personnel.

Our visits with customers were deliberately loosely structured. We asked customers to clarify the nature of their responsibilities and how they interacted with DFAS, but beyond that we wanted to elicit from them the issues they felt were most important in their interactions with DFAS.

We also visited the Department of Defense Inspector General (DoDIG) and the General Accounting Office (GAO). We identified them as "stakeholders" in DFAS; i.e., they are entities that influence and/or are influenced by DFAS. (DoDIG is also a DFAS customer.)

Finally, our research was complemented by analysis of DFAS data pertaining to costs, workload, and performance.

DFAS's Interactions with Its Customers

One of our first objectives was to identify how different levels of the DFAS organization interact with various customers.

Customer installations generally interact with 1 of the 19 DFAS OPLOCs. Customer headquarters, on the other hand, deal primarily with their regional centers, although they also interact to some extent with DFAS headquarters and with their OPLOCs.

When the DFAS finance and accounting processes function correctly, there is little, if any, human intervention. Most interactions between DFAS personnel and customer personnel fall into the "exception management" category; i.e., their purpose is to fix something that has gone awry.

Many DFAS customers have little or no awareness of what the costs are for the services they receive from DFAS. Bills for appropriated fund customers are paid at a high level, and personnel at the installation level have limited concern with costs. WCF customers actually see their DFAS bills and therefore have more incentives to be interested in DFAS costs. Yet these customers expressed little concern about costs; they were more concerned about perceived quality deficiencies in DFAS's performance.

DFAS Finance Services

The customers we interviewed cited two shortcomings in DFAS finance services: unacceptably high interest penalty payments and the problems DFAS has in making timely and accurate payments to military personnel.

Under the Prompt Payment Act of 1982, the government is forced to make interest penalty payments to contractors when payments are delayed more than 30 days from the time the government receives a proper invoice for goods or services provided by a contractor. These penalty payments come out of customers', not DFAS's, budgets.

Among DFAS regions, Kansas City (the primary provider for the Marine Corps) shows the greatest, and worsening, proportional problem with interest penalty payments. The data also suggest that penalty payment rates increase when there is greater stringency in procedures to ensure that, before payment is made, disbursements are matched to the appropriate obligation in the accounting records.

Some, but not all, DFAS customers voiced concern about another issue related to DFAS finance services: the ability to issue timely, accurate paychecks to military personnel. Problems in this area are the result of obsolete processes, including electronic systems, in combination with a short timeline for major changes in military pay passed by Congress during the fall of 1999. DFAS is trying to

correct this problem by implementing a new, more flexible military pay/personnel process and updated computer systems.

Because we also heard that other customers have never had problems with their military pay from DFAS, it is possible that the emphasis on this issue was idiosyncratic to the period of our visits.

DFAS Accounting Services

Accounting services are DFAS's single largest "output."

DFAS customers need accounting services partly for compliance reasons; for example, resource managers need to keep track of expenses so that they do not overrun their budgets and thereby violate the Anti-Deficiency Act.

However, the GAO believes that accounting should also be useful for management purposes. According to GAO personnel, the Chief Financial Officers (CFO) Act of 1990 is designed to bring "real financial management" to the federal government. However, the Act really only mandates the superficial trappings of "real financial management," such as auditable financial statements, without ensuring useful financial information that helps an organization's decisionmakers in the practical, day-to-day management of the organization. We are concerned that the DoD might someday comply with the letter of the CFO Act without achieving the far-reaching management advantages the GAO foresees.

Most DFAS customers we talked to were uninterested in the CFO Act. Appropriated fund customers primarily want checkbook-like information from the accounting system to answer questions such as "How much has been spent?" and "How much is left?" WCF customers put a higher priority on accounting. They are looking for activity-based costing (ABC)–type information that answers questions such as "How much does additional production of a given output cost?" DFAS, therefore, finds itself having to respond to legislation that conflicts with the priorities of most of its customers.

Both types of customers suggested that current DFAS accounting data are too untimely and too inaccurate to be useful. The accuracy of accounting data is degraded by chronic "problem disbursements." A problem disbursement arises when money is disbursed against a budget line different from the one where it was obligated. Data from DFAS's Performance Management Information System (PMIS) suggest that there has been a reduction in the number of problem disbursements in recent months.

Finally, DFAS has a troubling problem, both in accounting and finance, with bringing on new systems. The customers we talked to felt that systems acquisition and implementation are DFAS weaknesses.

Recommendations

RAND makes four recommendations to DFAS leadership.

First, we urge development of the capability to respond to crises like the FY00 change in military pay. A "surge" workforce could be developed, for example, by cross-training workers so they can swing into different positions as needed, and by using contractors.

Second, we urge a continuation of DFAS pricing reforms. We favor customer-specific billing rates for all finance and accounting outputs as well as nonlinear pricing. And DFAS's efforts to respond to the CFO Act could be funded by direct congressional appropriation so that customers are not forced to pay for a large project they do not value highly.

Third, we think DFAS should acquire new software commercially. Like many private-sector firms, DFAS does not develop and implement new systems well. Even Microsoft does not develop its own accounting software.

Fourth, we urge DFAS to make greater use of the Web. Rapid posting of information on the Web will make the accounting data that DFAS customers receive more timely and it will expedite efforts to fix errors.

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Of course, remaining errors are the authors' responsibility.

Acronyms

ABC	Activity-based costing
ACC	Air Combat Command
ADP	Automatic Data Processing, Inc.
AFB	Air Force Base
AFMC	Air Force Materiel Command
AFPAA	Armed Forces Personnel Administration Agency
AIMD	Accounting and Information Management Division
AMC	Army Materiel Command
AMCOM	Army Missile Command
BRAC	Base realignment and closure
CFO	Chief Financial Officers
C.F.R.	Code of Federal Regulations
CPA	Certified public accountant
DAO	Defense Accounting Office
DBOF	Defense Business Operations Fund
DFAS	Defense Finance and Accounting Service
DIMHRS	Defense Integrated Military Human Resource System
DISA	Defense Information Systems Agency
DJAS	Defense Joint Accounting System
DLA	Defense Logistics Agency
DoD	Department of Defense
DoDIG	Department of Defense Inspector General
DTS	Defense Travel System
DWCF	Defense Working Capital Fund

EC	Electronic Commerce
EC/EDI	Electronic Commerce/Electronic Data Interchange
EIU/AA	Economist Intelligence Unit/Arthur Andersen
FY	Fiscal year
GAO	General Accounting Office
HQ	Headquarters
MOCAS	Mechanization of Contract Administration Services
NSIAD	National Security and International Affairs Division
NULO	Negative unliquidated obligation
OPLOC	Operating location
OSD	Office of the Secretary of Defense
PMIS	Performance Management Information System
RADSS	Resource Analysis Decision Support System
RICO	Racketeer Influenced and Corrupt Organizations Act
SAMMS	Standard Automated Materiel Management System
STARFIARS	Standard Army Financial Inventory Accounting and Reporting System
TACOM	Tank-automotive and Armament Command
UMD	Unmatched disbursement
U.S.C.	United States Code
WCF	Working capital fund

1. Introduction

During the summer of 1999, Dr. Bruce Carnes, the deputy director of the Defense Finance and Accounting Service (DFAS), engaged RAND to study the interactions between DFAS and its customers and to recommend ways that DFAS might improve those interactions.

About DFAS

DFAS provides finance and accounting services to myriad Department of Defense (DoD) entities. "Finance," in DFAS vernacular, refers to paying people, e.g., military personnel, government-employed civilians, and contractors. "Accounting," meanwhile, means tabulating and analyzing DoD budget, obligation, and disbursement data, and the execution of payments.

DFAS is responsible for the execution of an enormous volume of transactions. Virtually all of the DoD's roughly $260 billion annual budget flows through DFAS. Indeed, because many transactions are between DoD entities under the auspices of DFAS, DFAS often "handles" the same dollar more than once. For example, Air Combat Command (ACC) purchases repair services from Air Force Materiel Command (AFMC) and DFAS manages all the financial aspects of the transaction, including the expenditure for ACC and the revenue for AFMC as well as, presumably, some sort of expenditure by AFMC later on.

DFAS's annual costs to provide these services to the DoD are about $1.6 billion (as discussed in our previous research; Keating and Gates, 1999). The goal of this study is to help improve the finance and accounting services DFAS customers receive and/or to suggest approaches for reducing DFAS's costs without unacceptable reductions in the quantity and quality of services it provides.

Organization of the Report

Chapter Two provides additional background information about DFAS.

In Chapter Three, we discuss the research methodology we used for this study.

Because the goals of the study were to focus on DFAS and its customers, that's where we began: by looking at how the different parts of DFAS interact with their many customers. Chapter Four describes what we found.

Chapter Five focuses on one of the two main services provided by DFAS: finance. We interviewed both DFAS and customer personnel to see how well DFAS is doing in this area and what the greatest customer concerns are.

DFAS accounting services are the focus of Chapter Six.

Chapter Seven presents our recommendations to DFAS leadership for policy changes and areas worthy of more in-depth inquiry.

The appendices provide supplementary information too detailed or of too limited interest to include within the main chapters. Appendix A presents background on the argument discussed in Chapter Six that working capital fund entities should operate "like businesses" and our view that such an expectation is inappropriate under current regulations.

Appendix B provides a more detailed discussion about financial and managerial accounting and the Chief Financial Officers Act of 1990.

Appendix C provides a discussion of recent private-sector litigation related to defective software.

Appendix D supplements RAND's recommendation that DFAS plan a "surge" workforce using, in part, contractors, by providing a discussion of outsourcing.

2. Background

Founded in 1991, the Defense Finance and Accounting Service (DFAS) merged finance and accounting operations that were previously separate and specific to each service in the military. The logic of this agglomeration was that costs would be reduced through scale economies and a reduction in the number of disparate finance and accounting systems in use.

DFAS spent about $1.6 billion running its operations in fiscal year 1999 (FY99).

DFAS Services

DFAS is a provider of multiple finance and accounting products or "outputs," in DFAS vernacular. They are listed in Table 2.1.

Figure 2.1 shows that monthly trial balances, or the accounting side, represented more than 40 percent of those total expenditures. "Monthly trial balances" is a term DFAS uses to describe a variety of accounting products, e.g., monthly and year-end summaries of budget balances and account statements at various levels of aggregation.

Table 2.1

DFAS Outputs

Finance	Accounting
Civilian pay	Direct billable hours
Commercial invoices	Finance and accounting commissary
Contract invoices (MOCAS)[a]	Monthly trial balances
Contract invoices (SAMMS)[b]	
Foreign military sales	
Military active pay accounts	
Military pay incremental	
Military reserve pay accounts	
Military retired pay accounts	
Out-of-service debt cases	
Transportation bills	
Travel vouchers	

[a] MOCAS stands for Mechanization of Contract Administration Services.

[b] SAMMS stands for Standard Automated Materiel Management System.

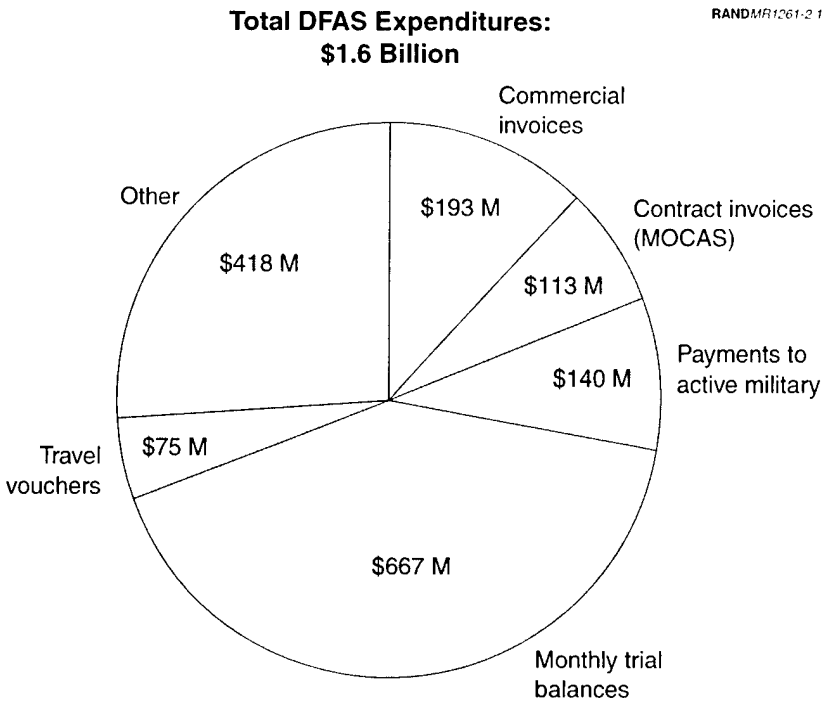

Figure 2.1—DFAS Regions' FY99 Expenditures by Output

On the finance side, commercial and contract invoices are payments to DoD contractors. The execution of such payments cumulatively represents about a fifth of DFAS's FY99 expenditures. Payments of wages and benefits to active military personnel represent about 9 percent of the expenditures. "Travel vouchers," the processing and payment of travel expense reports, represent 5 percent.

DFAS Organization

DFAS's headquarters is in Arlington, Virginia. Reporting to the headquarters are five "regional centers": Cleveland, Ohio; Columbus, Ohio; Denver, Colorado; Indianapolis, Indiana; and Kansas City, Missouri. Three of the five regional centers have operating locations (OPLOCs) that report to them. The regional centers largely devote their efforts to specific military clients, as shown in Table 2.2.

The OPLOCs have largely supplanted what was a network of more than 100 Defense Accounting Offices (DAOs). Previously, there was a DAO at almost every major military installation. Today, with the exception of those OPLOCs

located on active military installations, most military customers do not have routine face-to-face interaction with DFAS personnel.

Not surprisingly, DFAS's largest customers are the military services. Table 2.3 lists DFAS's largest FY99 customers, ordered by revenue.

Table 2.2

DFAS Regional Centers and OPLOCs

Regional Center	Associated OPLOCs	Primary Customer
Cleveland, OH	Charleston, SC	Navy
	Honolulu, HI[1]	
	Norfolk, VA	
	Oakland, CA	
	Pensacola, FL	
	San Diego, CA	
Columbus, OH	None	DoD agencies
Denver, CO	Dayton, OH	Air Force
	Limestone, ME	
	Omaha, NE	
	San Antonio, TX	
	San Bernardino, CA	
Indianapolis, IN	Lawton, OK	Army
	Lexington, KY	
	Orlando, FL	
	Rock Island, IL	
	Rome, NY	
	Seaside, CA	
	St. Louis, MO	
	Kaiserslautern, Germany	
Kansas City, MO	None	Marine Corps

SOURCE: The DFAS Web site at http://www.dfas.mil.

Table 2.3

DFAS's Largest Customers

Customer	FY99 Revenue ($ millions)
Army	550.7
Navy	363.6
Air Force	316.0
Marine Corps	70.5
Defense Logistics Agency	68.8
Other	198.7

NOTE: Data are September 1999 estimates.

[1] DFAS also has a satellite facility in Japan that reports through the Honolulu OPLOC.

DFAS Pricing and Billing

DFAS is a Defense Working Capital Fund (DWCF) entity. As such, it is supposed to charge its customers for services performed so as to recover its costs.

As we discussed in Keating and Gates (1999), DFAS's price structure is linear; i.e., DFAS revenue increases in direct proportion to workload. For each output, DFAS has defined a service provision measure it terms "work unit." Each output's work unit has an associated price, as shown in Table 2.4. For finance outputs, the work unit metric is an action undertaken, e.g., a travel voucher processed or a check issued. For accounting, however, the system is more complicated. In fiscal year 2000 (FY00), DFAS switched from billing per active customer irrespective of how much work was done for that customer (monthly trial balances) to hourly billing. (Commissary accounting billing is still by account, however.) FY00 also saw the creation of four new outputs: (1) Commercial invoices EC (Electronic Commerce); (2) Contract invoices (MOCAS)—EC/EDI (Electronic Commerce/Electronic Data Interchange); (3) Contract invoices (SAMMS)—EC/EDI; and (4) Travel vouchers DTS (Defense Travel System). In each case, the new output is designed to reward, via a considerably lower price, DFAS customers who are willing to adopt lower-cost, more automated, and arguably more efficient approaches.

For finance outputs, charges across customers are typically the same. For accounting, however, rates are customer specific.

The finance per-work-unit and the accounting hourly rates are burdened. They include not only the direct costs of DFAS personnel, but allocations of DFAS overhead and facilities' costs. They also include allocations of DFAS payments to the Defense Information Systems Agency (DISA) for accounting-generated computer expenses.[2]

[2] It would be hard for a specific DFAS customer to know how much the customer is paying DISA. The customer may directly pay DISA for some services, but other DISA costs are filtered through DFAS via burdened billing rates. Comparably, a service's total payments to DFAS are obscured in that, for instance, Defense Logistics Agency (DLA) prices reflect payments from DLA to DFAS.

Table 2.4

DFAS Prices per Work Unit

Output	FY99	FY00
Finance		
Civilian pay	2.92	2.92
Commercial invoices	16.67	16.77
Commercial invoices EC	NA	12.38
Contract invoices (MOCAS)	117.25	126.25
Contract invoices (MOCAS)—EC/EDI	NA	100.33
Contract invoices (SAMMS)—Defense Commissary Agency	2.82	2.97
Contract invoices (SAMMS)—Defense Logistics Agency	10.40	13.12
Contract invoices (SAMMS)—EC/EDI	NA	8.17
Foreign military sales	161.78	166.21
Military active pay accounts	7.63	8.50
Military pay incremental—Army	11.64	11.43
Military pay incremental—Marine Corps	12.18	10.31
Military reserve pay accounts	3.17	3.59
Military retired pay accounts	2.18	2.13
Out-of-service debt cases	4.85	5.11
Transportation bills	14.44	15.19
Travel vouchers	16.44	30.99
Travel vouchers—DTS	NA	3.53
Accounting		
Direct billable hours		
Air Force		56.08
Army		69.52
Navy		92.44
Marine Corps		63.76
Defense Logistics Agency		84.63
Defense agencies		53.03
Finance and accounting commissary	2351.28	2883.84
Monthly trial balances		
Air Force	529.58	
Army	1557.62	
Navy	2184.78	
Marine Corps	1090.25	
Defense Logistics Agency	4180.27	
Defense agencies	1349.95	

As mentioned above, under the FY00 pricing reform, the accounting work unit is, in fact, a measure of input (hours of effort), not a measure of output. There are advantages and disadvantages to paying for DFAS accounting services on a direct-billable-hour basis. The direct-billable-hour approach has the virtue of more accurately charging specific customer organizations for the burden they put on DFAS. This means, for example, that organizations involved in time-consuming WCF accounting efforts will be charged more under direct-billable-hours billing than organizations using less time-consuming appropriated fund

accounting.[3] Previously, organizations in a given military service were charged the same amount per trial balance despite the differential burden they imposed. Also, inactive and small accounts were nevertheless billed every month they existed.

One concern with this reform is that it will be harder to assess DFAS accounting productivity. Customers will be billed based on DFAS's labor input. Unlike other outputs, there will be no external measure of the amount of workload customers provide to DFAS. Also, we were told the tabulation of workers' hours was a manual, arduous process. One might also be concerned that such a billing approach provides insufficient incentive to DFAS to work accurately and efficiently. Customers pay, for example, for time DFAS spends correcting its own errors.

One proposal we heard was to bill for accounting based on accounting transactions undertaken, particularly if such transactions could be tallied automatically. The billing system should charge higher-burden customers more (a virtue of direct-billable-hour billing), but should also be minimally intrusive to tabulate and would ideally allow measurement of accounting productivity (e.g., accounting expenditures per transaction). However, we have yet to find a consistent, automated way to define and measure accounting outputs.[4]

As noted, DFAS prices are designed to match its revenue and costs. Price determination is a two-year process. First, DFAS estimates costs and workload for each output for two years in the future. These cost and workload estimates are then vetted through customers with the Office of the Secretary of Defense (OSD) Comptroller ultimately adjudicating disagreements between DFAS and its customers. DFAS cost estimates, for price-setting purposes, include not only the direct costs of providing the output, but allocations of OPLOC, regional center, and headquarters overhead, plus assessments (if needed) to cover losses from the previous year. U.S. General Accounting Office (September 1997) describes the DWCF price-setting process in more depth.

Once work is performed for a customer, DFAS presents a bill to the customer's headquarters. These bills indicate how many work units of each output DFAS

[3] "Appropriated fund" customers are those whose funding largely emanates from the annual congressional appropriation process. "Warfighting" organizations like the Air Combat Command, Atlantic Fleet, and Forces Command receive appropriated funding. By contrast, many "support" organizations (e.g., Air Force Materiel Command, Army Materiel Command, DFAS, DLA, and Navy Sea Systems Command) largely are in various types of working capital funds. They "sell" goods and services to "warfighters," directly or indirectly.

[4] Indeed, private-sector accounting firms typically bill by the hour, suggesting that measurement of accounting outputs is not a trivial endeavor.

provided to the customer. However, the billing information is not generally broken down into more detail. For example, the Marine Corps was billed for 317,395 travel vouchers in FY99, but DFAS's routine billing information provided to Marine headquarters does not indicate how many of these travel vouchers were generated by a specific installation such as Camp Lejeune.

The level of aggregation of DFAS billing varies by whether a customer is (like DFAS) a working capital fund (WCF) entity. Each separate WCF entity receives and is responsible for paying its own DFAS bill. For example, in FY99, DFAS billed 24 individual Army WCFs. They are listed in Table 2.5; obviously, some are quite specific and small. By contrast, appropriated fund bills are highly aggregated. The Army, for instance, received three DFAS bills for appropriated fund services: Operations and Maintenance; Research, Development, Test, and Evaluation; and Army Family Housing. There is no breakdown of expenses generated by Forces Command versus those by Training and Doctrine Command, for example.

Table 2.5

Army Working Capital Funds Billed by DFAS in FY99

Army Missile Command (AMCOM) (Aviation)
AMCOM (Missile)
Anniston Army Depot
Blue Grass Army Depot
Communications-Electronics Command
Corpus Christi Army Depot
Crane Army Ammunition Activity
Industrial Logistics System Center
Information Systems Software Center—Fort Belvoir
Letterkenny Army Depot
Logistics Systems Support Center—St. Louis
McAlester Army Ammunition Plant
Pine Bluff Arsenal
Red River Army Depot
Rock Island Arsenal
Sierra Army Depot
Soldier and Biological Chemical Command (SBCCOM)
Tank-automotive and Armament Command (TACOM)
TACOM—Armament and Chemical Acquisition and Logistics Activity (ACALA)
Tobyhanna Army Depot
Tooele Army Depot
United States Army CECOM[a]—Systems Management Center, Product Manager, Small Computer Program
USA Information Systems Software Development Center Lee—Fort Lee
Watervliet Arsenal

[a] CECOM stands for Communications Electronics Command.

3. Methodology

Interviewing Within DFAS

To collect information for this project, we met with various and well-informed DFAS and customer personnel.

Within DFAS, we arranged to meet with personnel at the headquarters (HQ), regional center, and OPLOC levels. Table 3.1 lists the offices whose personnel we interviewed.

Our primary starting point with DFAS personnel was to ask how each person interacted with DFAS customers and what were the primary issues that arose in the course of the interaction. We also solicited insight as to how DFAS's interactions with customers might be improved.

Interviewing DFAS Customers

With DFAS customers, we started with the highest-level, identifiable contacts who deal regularly with DFAS and were available to meet with us. These meetings were deliberately loosely structured. We asked customers about their interactions with DFAS but attempted, to the extent possible, to not raise specific issues (e.g., problematic outputs, the costs of DFAS) first. The purpose of these meetings was, in part, to elicit what customers felt was most important in their interactions with DFAS, without "leading" their input.

All the customers we talked to were told that their comments would not be specifically attributed to them.[1]

We also asked HQ-level customers to recommend experienced, knowledgeable personnel at command and installation levels of their organizations with whom we should meet. It was not our intention to randomly sample customer personnel at various levels. Instead, our goal was to identify and meet with particularly knowledgeable customers and/or those who, for whatever reasons, had experienced interesting or noteworthy interactions with DFAS.

Table 3.2 lists the customers we interviewed.

[1] A few, however, indicated they wanted DFAS to be able to link their identity to what they said.

Table 3.1

DFAS Visits

Level	Office	Position	Date
HQ	Military and Civilian Pay	Output director	9/27/99
	Vendor Pay	Output director	9/28/99
	Accounting	Output director	9/28/99, 7/17/00
	United Kingdom Ministry of Defence	Exchange officer to DFAS	1/24/00
	Resource Management	Director	1/24/00
Regional Center	Indianapolis	Director; business manager, Business Development Office	11/10/99
	Denver	Director of Resource Management	2/7/00
OPLOC	Pensacola	Director; deputy director	10/26/99
	San Bernardino	Director; director of Accounting	2/25/00

Interviewing DFAS Stakeholders

As our research moved forward, we realized that our picture of DFAS would be more complete if we met with some DFAS "stakeholders." We use the term "stakeholder" to refer to entities that influence and/or are influenced by DFAS, but are not directly customers of DFAS. Table 3.3 provides information about our stakeholder meetings.

In meeting with the DoDIG, we learned that, along with having an auditing/oversight role over DFAS (which is why we interviewed DoDIG in the first place), DoDIG is also a DFAS customer. (DoDIG gets an annual appropriation that DFAS then manages, akin to any other DoD appropriated fund organization.)

Table 3.2

Customer Visits

Level	Customer	Office/Position	Date
HQ	J8/SARAD[a]	Chief (Support Agency, Reform and Assessment Division)	12/15/99
	Air Force	Deputy assistant secretary (Financial Operations)	12/16/99
	Marine Corps	Head, Financial Systems Unit, Liaison & Technical Services Branch, deputy chief of staff for Programs & Resources	12/17/99
	Army	Deputy assistant secretary (Financial Operations); Director, Finance and Accounting Oversight Division	12/17/99
	Navy	Director, Office of Financial Operations	2/15/00
	Army	Office of the Assistant Secretary of the Army (Financial Management & Comptroller)	2/15/00
	DLA	Comptroller; Chief, Financial Policy & Managerial Accounting Group	4/18/00
Regional Center	Air Force—DFAS Denver	Deputy liaison	2/8/00
Command	Army Materiel Command (AMC)	Deputy chief of staff for Resource Management; Chief, Staff Finance & Accounting Division	4/17/00
	Office of Naval Research	Comptroller	6/1/00
Installation	MacDill AFB	Comptroller	3/14/00
	Los Angeles AFB	Director of Financial Management and comptroller	3/29/00
	Nellis AFB	Comptroller, 99th Squadron	5/10/00
	Fort Bliss	Director of Resource Management	5/11/00

[a] J8 stands for the director for Force Structure, Resources & Assessment, Joint Chiefs of Staff.

Table 3.3

Stakeholder Visits

Office	Position	Date
DoD Inspector General (DoDIG)	Director, Finance and Accounting Directorate	5/31/00
General Accounting Office (GAO)	Director, Defense Financial Audits	6/2/00

Looking at the Private Sector

We further complemented our research by attending the American Institute of Certified Public Accountants' Spring 2000 conference in Seattle, April 27–29. We felt private-sector accounting processes might provide insight for DFAS leadership. We also visited Automatic Data Processing's (ADP) Gary Butler, president and chief operating officer, and Jan Siegmund, vice president for strategic planning, at ADP headquarters in Roseland, New Jersey, on July 20, 2000. ADP is a leading company providing payroll services comparable to DFAS's civilian, military, and retiree pay outputs.

Data Analysis

Finally, we also undertook data analysis to support this research using expenditure and quality data provided to us by DFAS. Our two data sources were the Resource Analysis Decision Support System (RADSS) and the Performance Management Information System (PMIS). RADSS tallies DFAS's expenditures and workload by output and location. (It is described in much greater depth in Keating and Gates, 1999.)

PMIS is a newer data system designed to measure the "quality" of DFAS's performance, e.g., the timeliness and accuracy of finance outputs.

4. DFAS's Interactions with Its Customers

One of the starting points in our meetings with customers and DFAS personnel was to establish with whom they interact and to characterize the nature (e.g., topics, frequency) of those interactions.

Some patterns of interaction varied based on the personalities involved and/or structural differences among customers. Nevertheless, patterns emerged.

Patterns of Interaction

Customer installations predominately interact with one designated OPLOC. However, some installations have more complex situations that involve contact with multiple OPLOCs. Some OPLOCs have specific people dedicated to one or a few installations. Customer installations seemed to appreciate this approach.

Customer headquarters tend to deal primarily with their service's regional center. Recall that these regional centers were, in general, part of the respective customers' organizations prior to the formation of DFAS. Customer headquarters also deal with DFAS headquarters and OPLOCs, but not necessarily on a day-to-day basis. Customer major commands fell between these two endpoints. The major commands we talked to deal with both their service's regional center and whatever OPLOCs service their installations.

The Indianapolis regional center has adopted specific points of contact for each Army major command; e.g., Army Materiel Command (AMC) deals with Steve Bonta of Indianapolis.

The Air Force has proposed moving to a system whereby all the installations in a given Air Force major command are served by a given OPLOC.

One of the most complex and problem-prone cases, we learned, involves increasingly frequent cross-service transactions. This might arise, for instance, if Navy jets are using an Air Force base so the Air Force base ends up making a disbursement of Navy funds. Such an example would then involve multiple DFAS OPLOCs and regions and disbursement and accounting systems. (See, for example, U.S. General Accounting Office, March 1997).

Exception Management

The vast bulk of day-to-day interactions between DFAS and its customers appears to be "exception management," i.e., fixing something that has gone awry.

Specifically, if the various DFAS processes are working correctly, work flow is largely (if not completely) automated. It is when the process fails that extensive and sometimes lengthy human intervention is required.

Problems appear to percolate up the chain. Ideally, problems are solved at the level at which they are first identified, typically the installation-OPLOC level. However, problems not solved at the local level or more pervasive problems "climb the ladder" and get higher-level attention.

Several culprits were frequently identified as generating problems. For example, when a data entry error (either by DFAS or a customer) causes an invoice line of accounting number to not match to the correct contract line of accounting, potentially lengthy human intervention is needed. Matching contract invoices (bills) to receiving reports (documents showing an item was properly received) is another problem. Obviously, DFAS does not want to pay a bill on behalf of a customer until and unless DFAS is sure the customer has received the item. Also, the boundaries between disparate systems (e.g., the supply system and the accounting system in a service) are prone to difficulty. Thomas (2000) discusses problems with the interfaces between service-specific systems and DFAS systems.

The Navy matches commercial invoice and receiving reports before handing commercial invoice work to DFAS. Other services do not. Not surprisingly, Figure 4.1 shows that the Navy-affiliated Cleveland region had lower per-work unit costs for commercial invoices in FY99 than other regions.

Of course, Figure 4.1 only depicts DFAS's average expenditure per commercial invoice and thus does not reflect the total cost to DoD of providing this service. We know nothing about the additional costs the Navy incurs to match invoices and receiving reports.

There appears to be a logical inconsistency in these varying boundaries across customers. Specifically, the original logic for the formation of DFAS was that finance and accounting services can be more efficiently handled by a single provider. It was thought there would be economies of scale and scope.

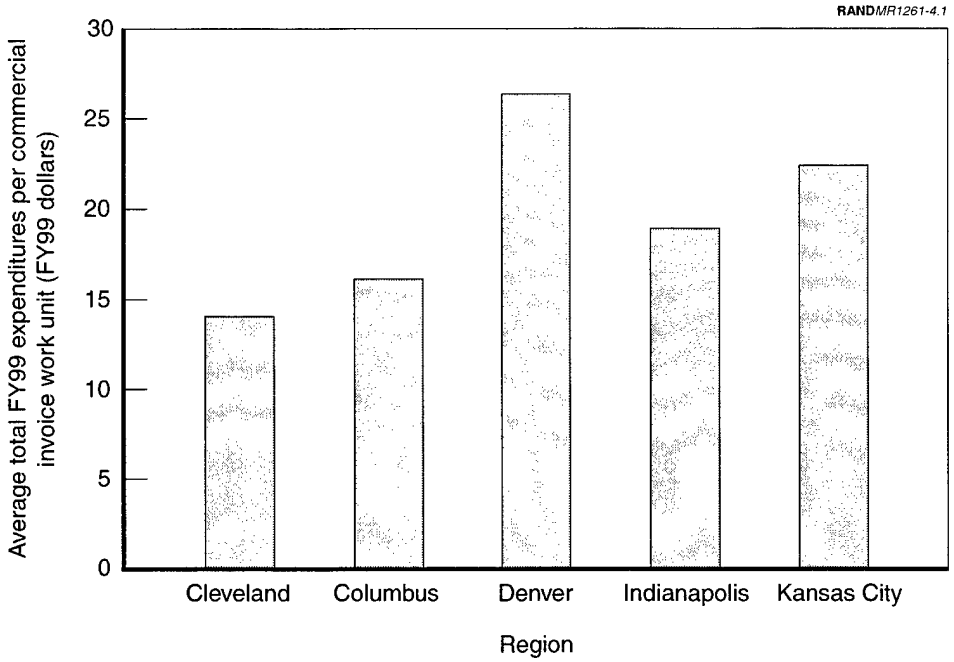

Figure 4.1—DFAS Regions' FY99 Commercial Invoice Expenditures per Work Unit by Region

Following that original logic, having the Navy alone consolidate its invoices and receiving reports suggests the Navy can do so more efficiently than DFAS could, but DFAS, in turn, can do such consolidation more efficiently than other services could. We know of no evidence to support these arguments. Instead, it appears the initial formation of DFAS was driven by a series of negotiations with customers, each possessing different notions as to the appropriate boundaries between themselves and DFAS.

Reported Performance Problems

Several of the installation-level customers we visited told us troubling stories of what they perceived to be inadequate performance on the part of various OPLOCs. Three different installations, for example, served by three different OPLOCs, told us stories of lost facsimiles (faxes) of financial documents. The installation would fax a requisite receiving report, for example, to the OPLOC, but OPLOC personnel would say they had not received the fax.

Different DFAS approaches have yet to solve this problem. One OPLOC previously had, we were told, various fax machines scattered about the facility. This approach was abandoned, however, in favor of a centralized fax facility.

Neither approach seemed to work well from the perspective of the OPLOC's customers we talked to.

These fax problems obviously burden DFAS customers who are not colocated with DFAS regional centers or OPLOCs. Those customers we talked to who were so colocated seemed considerably happier with DFAS than was the norm. (By contrast, ADP did not indicate that a lack of colocation with customers was a major issue.)

We hypothesize the fax problem is indicative of a more systemic problem. Specifically, far too many DFAS transactions remain paper dependent in this era of computer technology. Information as important as a receiving report should be transmitted electronically. Customers also felt this problem reflected a lack of customer service mentality on DFAS's part.

DFAS Costs and Billing

Many of the DFAS customers we talked to seemed markedly uninterested in and poorly informed about the costs of DFAS operations. There are several possible explanations for this finding.

First, on the appropriated fund side, DFAS bills are paid at the headquarters level and are not filtered down. Installation-level knowledge of DFAS costs might be characterized as fragmentary. It was not obvious that installation personnel, particularly those who spend appropriated funds, have any incentive to limit the burden they place on DFAS.

In contrast to appropriated fund commands, WCF entities like the AMC and the DLA do see bills from DFAS and will pay a larger DFAS bill if they put greater demands upon DFAS.

Yet, as discussed in the next two chapters, almost all the customers we talked to seemed more concerned with perceived quality deficiencies in DFAS service rather than the cost. Indeed, several customers expressed the sentiment that they would be willing to pay DFAS more if they could be assured good service. Until the level of service is perceived as adequate, cost issues will not be of predominant interest.

5. DFAS Finance Services

This chapter discusses customers' views of DFAS's finance services. We also present insight on these issues from DFAS's perspective as well as from analysis of PMIS data.

We noted major differences between appropriated fund and working capital fund (WCF) customers in terms of their perceptions about DFAS's services. The appropriated fund customers we visited focused on two separate issues: a perception of unacceptably high interest payment penalties due to DFAS delays in processing commercial and contract invoices, and problems getting payments to military members accurately adjusted to reflect recent military pay table changes.

Interest Penalty Payments

Under the Prompt Payment Act of 1982, amended by Public Law 100-496 of 1988 (5 C.F.R. 1315), the government is forced to make interest penalty payments to contractors when payments for services or products are delayed over 30 days from the receipt of the item and a proper invoice (see U.S. General Accounting Office, May 1997). Much to customers' consternation, these penalties are their responsibility, irrespective of whether DFAS or the customer caused the delay.[1]

DFAS's PMIS can shed light on the interest penalty payment problem. Table 5.1 lists the five regions' calendar 1998 contract disbursements,[2] penalty payments, and penalty payment rates.[3]

Although the total dollar value of Marine interest penalty payments is small, the Marine Corps and the Navy have the highest interest penalty payment rates. The Kansas City region has shown an adverse trend in its penalty rate since mid-1998, as shown in Figure 5.1.

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[1] In Appendix A, we argue that, under DFAS's current structure, it would not be sensible to propose that DFAS pay these penalties. Penalties "paid" by DFAS will be ultimately shifted on to all customers, including those without delayed payments to contractors.

[2] A "disbursement" is when a check is actually written to someone (or, more likely, the funds are transferred electronically). By contrast, an "obligation" is when the money is set aside to pay someone, but the associated disbursement would wait until work is completed or a part is received.

[3] We cannot create such a data table for FY99: Our Indianapolis region data only run up to April 1999 for the relevant PMIS questions.

Table 5.1

Calendar 1998 Performance Management Information System (PMIS)
Penalty Payment Data

Region (Primary customer)	Disbursements (billions of 1998 dollars)	Penalty payments (millions of 1998 dollars)	Penalty payments per $10,000 disbursed ($)
Cleveland (Navy)	13.2	8.1	6.15
Columbus (DoD agencies)	59.8	12.7	2.13
Denver (Air Force)	10.2	3.4	3.33
Indianapolis (Army)	14.0	4.6	3.27
Kansas City (Marine Corps)	0.9	0.6	6.81

Many factors contribute to the level of interest penalty payments.

We wonder if there is any relationship between the Navy's commercial invoice/receiving report matching, discussed in the previous chapter, and the Cleveland region's comparatively high interest penalty payment rate.

The interest penalty rate, we learned, is positively correlated with the stringency with which DFAS ensures that disbursements correspond with obligations in the accounting records before making the disbursement. This process is termed "prevalidation." Stringency of prevalidation is influenced by DoD regulation and congressional legislation, not simply DFAS policies.

For example, Figure 5.2 shows the Columbus region penalty payment rate. We understand the February 1999 penalty payment rate spike there was due to a tightening of contract disbursement prevalidation procedures. This tightening was subsequently partially rescinded; the dollar threshold for prevalidation was raised.

Policies of prevalidating disbursements may reduce the number of problem disbursements,[4] but also tend to increase the interest penalty rate due to resultant delays.

It is also worth noting that the problems caused by late disbursements are not limited to interest penalties. We heard arguments that there are contractors who no longer do business with the government because of chronic payment delays, even though the contractors receive these penalty payments as a result of such delays. Delayed payments can create destructive cash-flow problems for contractors. The costs of these delays might be particularly burdensome for

[4] Chapter 6 has a lengthy discussion of problem disbursements.

small businesses that, for social policy reasons, the government might otherwise be trying to encourage.

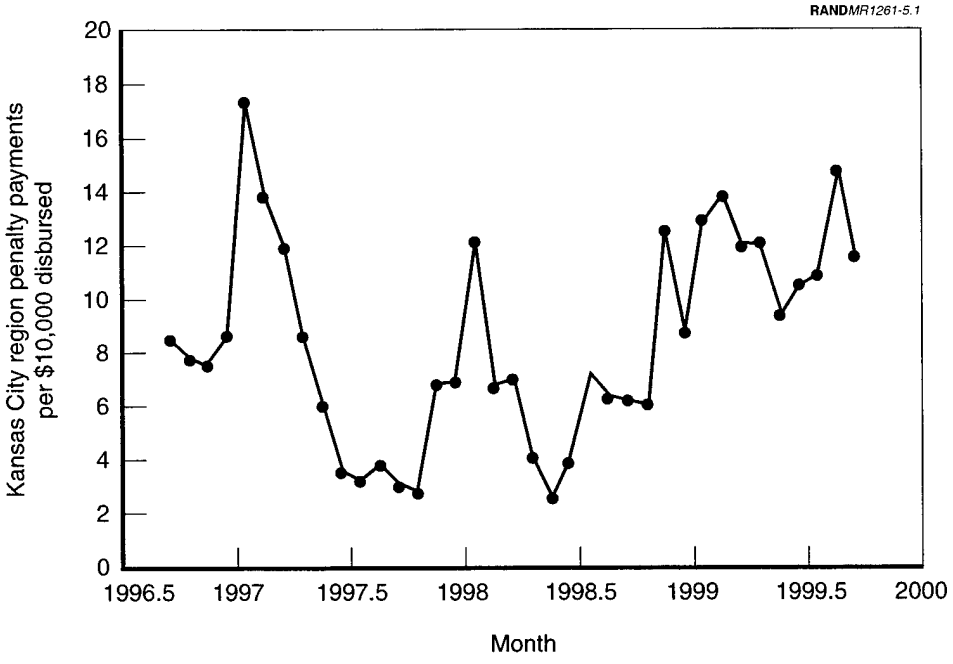

Figure 5.1—Kansas City Region Penalty Payment Rate

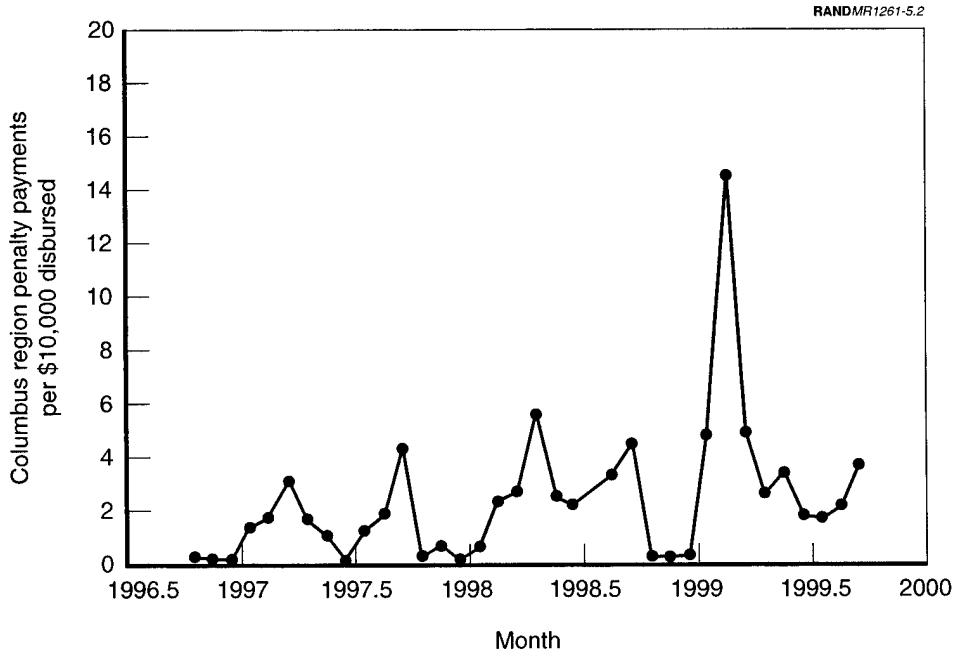

Figure 5.2—Columbus Region Penalty Payment Rate

Military Pay

Turning to the other oft-cited performance-quality problem, military pay difficulties have received unfavorable attention in the military press (see Palmer, December 13, 1999; December 20, 1999). Problems are alleged to emanate from some combination of brief lags between policy changes and enactment, customer input errors and delays, and the very manual DFAS military pay system.

DFAS does not always get an enormous amount of lead time to incorporate changes in military pay into the payroll system. For example, the president signed the law enacting the FY2000 Defense Appropriations Act on October 26, 1999 (*Army Times*, 1999). That Act included a military pay raise effective January 1, 2000, as well as changes in military entitlements (e.g., flight pay) retroactive to October 1, 1999. Of course, the pay changes were debated extensively ahead of time.

DFAS personnel noted that the existing military pay systems are highly obsolete, making large-scale pay changes difficult to handle. DFAS is currently trying to put all the services on a new military pay/personnel system, the Defense Integrated Military Human Resource System (DIMHRS).

At the same time, we found that other DFAS customers have noted years of accurate and timely military and retirement payments without any problems. Military pay has traditionally not been a problematic output, in the eyes of many customers. Perhaps, had we visited customers at a different time, there would not have been fervent concerns expressed about this topic.

6. DFAS Accounting Services

In this chapter, we discuss customer views of DFAS accounting services. This topic was of preeminent importance to DFAS's (WCF) customers.

The Purposes of DoD Accounting

There are several reasons the DoD does accounting. One reason is accountability. The DoD wants to be able to tell taxpayers where money has gone. Also, DoD financial managers need to be sure that they do not spend more money than they have been budgeted. Such overspending would violate the Anti-Deficiency Act (31 U.S.C. 1341(a) (1), 1517) and would potentially expose managers to severe personal liability.

Another argument for accounting is that such information can assist decisionmakers. Horngren and Sundem (1988) note "accounting helps decision making by showing where and when money has been spent and commitments have been made, by evaluating performance, and by indicating the financial implications of choosing one plan versus another."

The GAO agrees with this view. The GAO notes there are a number of policy-relevant questions the DoD cannot readily answer because of allegedly deficient accounting practices. For example, what level of cost savings emanates from base realignment and closure (BRAC)? How much does provision of services by government employees cost, short of conducting an A-76 cost comparison?[1] Gates and Robbert (2000) note how difficult it is to track the cost of a government employee Most Efficient Organization after an A-76 cost comparison.

The CFO Act of 1990

The GAO's view, expressed to us in our visit, is that the Chief Financial Officers (CFO) Act of 1990 will, if responded to fully, provide DoD with "real financial management." Unfortunately, as the GAO has noted (U.S. General Accounting Office, May 1999), a number of areas of concern remain to be resolved before the

[1] "A-76" refers to the Office of Management and Budget circular describing the procedure for cost comparisons between provision of services by government employees and contractor provision.

Table 6.1

Selected Provisions of the Chief Financial Officers Act of 1990

Title I	General Provisions The act's purposes are to - bring more effective general and financial management practices to the federal government; - provide for systems improvements to assure issuance of reliable financial information and to deter fraud, waste, and abuse; and - provide for the production of complete, reliable, timely, and consistent financial information.
Title II	Establishment of Chief Financial Officers Agencies each have chief financial officers with demonstrated ability in financial management practices.
Title III	Enhancement of Federal Financial Management Activities Agencies must create financial statements showing - overall position; - results of operation; - cash flows; and - reconciliation to budget reports. Statements must be consistent with applicable accounting principles and standards. Each financial statement shall be audited by the agency's inspector general.

DoD meets the specifications of the CFO Act. Lieberman (2000) also discusses DoD's efforts to respond to the CFO Act.

The CFO Act itself focuses on various positions and reports that must be created by federal government organizations. For example, the DoD must have a chief financial officer and that officer is responsible for producing a variety of auditable financial statements including balance sheets, cash-flow analyses, and reconciliations. Table 6.1 highlights provisions of the CFO Act.

The nature of the legislation, however, is that it does not, and perhaps cannot, mandate "real financial management." Instead, it mandates the creation of trappings of "real financial management," e.g., the types of reports and structures that one presumes would exist if such management were occurring.

In the vernacular of accounting, the CFO Act's stipulations are predominately in the vein of financial accounting rather than managerial accounting. Financial accounting involves reports such as balance sheets and income statements that are required in the private sector for reports to shareholders for tax purposes. Managerial accounting, by contrast, is the tabulation of internal information that is used by the firm's decisionmakers, but not generally publicly released. In Appendix B, we present further information on the CFO Act and the distinction between financial and managerial accounting.

We are quite concerned DoD might achieve compliance with the letter of the CFO Act without ever achieving the sorts of far-reaching management improvements GAO foresees. Lieberman (2000) expresses similar concerns, wondering whether CFO Act–generated data are useful to DoD managers and Congress. At the same time, DFAS personnel suggested the CFO Act's provisions could ultimately benefit customers in terms of helping rectify various data problems. Under that hypothesis, the CFO Act may prove to be a necessary, but not sufficient, condition for "real financial management."

Customers' Perspectives on the CFO Act of 1990

There appears to be a challenging disconnect between how the GAO and Congress view the CFO Act and how DFAS customers view it.

We asked a number of DFAS customers what advantages they would receive if DoD achieved compliance with the CFO Act. The typical answer was "none." These customers see the CFO Act as a mandated compliance exercise, but nothing that will improve their decisionmaking. We heard skepticism from both WCF and appropriated fund customers, though appropriated fund customers were perhaps more skeptical, as a group. WCF customers see more direct value in good accounting information so, therefore, they see greater potential benefit from the CFO Act.

Customers seemed particularly skeptical of the balance sheet requirements of the CFO Act. It is of no immediate management importance to them, for instance, how weapon systems are valued on a DoD balance sheet. Yet, Cotton (2000), for instance, argues for detailed tabulation of the value of defense property, plant, and equipment for accountability purposes.

DFAS finds itself in a difficult situation on this matter. Its desire to be responsive to customers is trumped by this legislative direction.

What Do Customers Expect from DFAS Accounting?

The customers we talked to have narrow expectations of what DFAS accounting can do for them. They view DFAS as a data repository, not as a "trusted accountant."[2] These customers are skeptical of a GAO argument that DFAS must take a leadership role with respect to measures like the CFO Act. Instead, they

[2] One customer suggested DFAS can never truly serve as a "trusted accountant" in that DFAS reports to the OSD comptroller and that the interests of a given DoD customer and those of the comptroller may be in conflict.

view DFAS as a service provider that should do what its customers request. DFAS is also skeptical of its potential to lead, rather than respond to, its customers.

The appropriated fund customers we talked to thought about accounting in a checkbook sense. How much money has been spent? How much is left?

Toward this end, Los Angeles Air Force Base and MacDill Air Force Base, two installations that largely expend appropriated funds, told us about software "overlays" they use to extract near-real-time data off DFAS (or DISA) systems to track their spending against their budgets. These overlays appear to perform a valuable function for these installations.

WCF customers had much more sophisticated accounting needs and obviously put higher priority on the issue than appropriated fund customers did.

WCF entities are to be run "like businesses," at least in the sense of raising enough revenue to cover the costs of the products and services they provide.[3] For this reason, WCF customers ask questions like "What are my true costs of producing this specific output?" Such a question is in the realm of activity-based costing (ABC). A true ABC system would be very popular in the WCF community where incremental costs of operations are important.

Slow Data and Problem Disbursements

Unfortunately, current DFAS accounting products do not measure up to WCF hopes. Two specific types of problems were cited.

First, accounting data were felt to be too delayed relative to management needs for information. DFAS reports on this month's expenditures, for instance, will not begin to surface until the middle of next month.

Second, even when data are reported, their accuracy is highly suspect. For example, there have been extensive concerns about "problem disbursements." A problem disbursement arises when the accounting for a disbursement does not match up with obligation data.

Problem disbursements are measured two ways. "Unmatched disbursements" (UMDs) are disbursements that are not matched to a corresponding obligation in the accounting records. "Negative unliquidated obligations" (NULOs) arise

[3] In Appendix A, we present a discussion of why we believe it is unreasonable to expect WCF entities to truly act "like businesses."

when an obligation is overdrawn (e.g., there have been more disbursements against it than obligations). A NULO might emanate from, for example, a disbursement being charged against the wrong obligation (for more description of these problems, see U.S. General Accounting Office, May 1997).

DFAS's PMIS tracks NULO and UMD balances. The NULO and UMD balances are snapshots of how many dollars are currently in these categories. The balances of both categories evolve over time as problems are resolved and new difficulties are encountered. The actual problem disbursements may have occurred months (or years) earlier, but have yet to be unraveled. Figures 6.1 and 6.2 show that the balances of both NULOs and UMDs have fallen, DFAS-wide, in recent months. A declining balance suggests that a greater dollar value of NULOs/UMDs has been rectified than has been generated in the last month. However, about $1 billion in NULOs and $3 billion in UMDs remain.

Figures 6.1 and 6.2 mask the fact that NULOs and UMDs disproportionately affect specific DFAS customers. For example, DFAS leaders told us that AMC, the Ballistic Missile Defense Organization, the Naval Air Systems Command, and the Naval Supply Systems Command have a disproportionate number of problem disbursements.

Problem disbursements can arise in a number of ways (see U.S. General Accounting Office, April 1997). For example, line of accounting data input errors can make it difficult to link a given disbursement to the correct obligation. Nonintegrated computer systems force multiple entries of the same data. Multiple documents must be matched and a variety of complex accounting categories are used. Also, if computer systems change or entities change their names (say, via a command reorganization), it can be very difficult to link a current year disbursement with an obligation that may have been posted in a prior year. The GAO also suggested that transactions by others (e.g., Navy money disbursed by an Army base) are particularly prone to cause problem disbursements (see U.S. General Accounting Office, March 1997).

DFAS leaders suggested that the impending replacement of the MOCAS system in Columbus and the implementation of DFAS's Corporate Database should lead to marked reductions in the NULO and UMD balances.

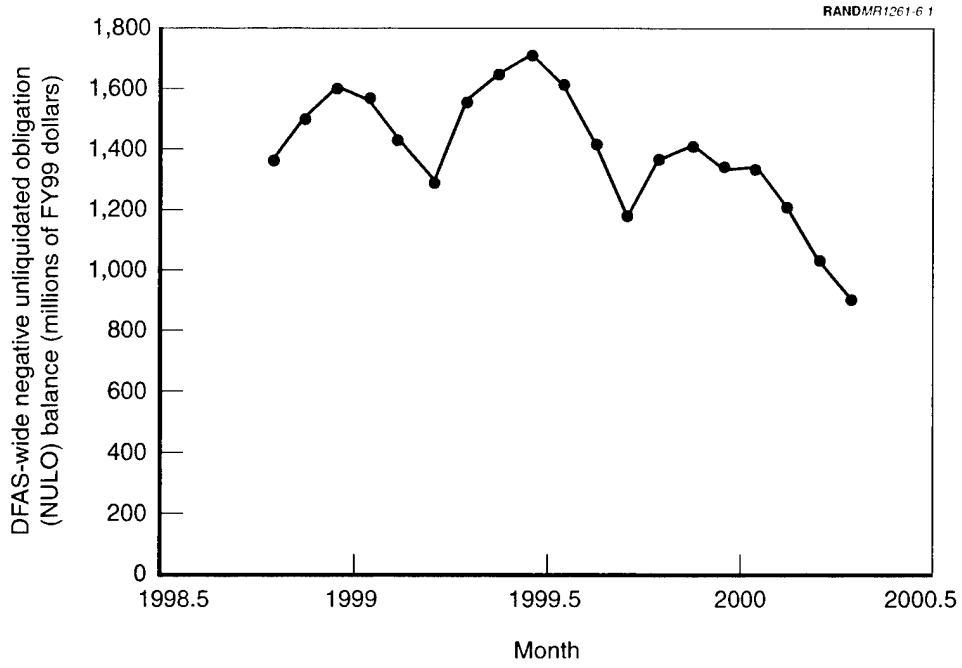

Figure 6.1—DFAS-wide Negative Unliquidated Obligation (NULO) Balance

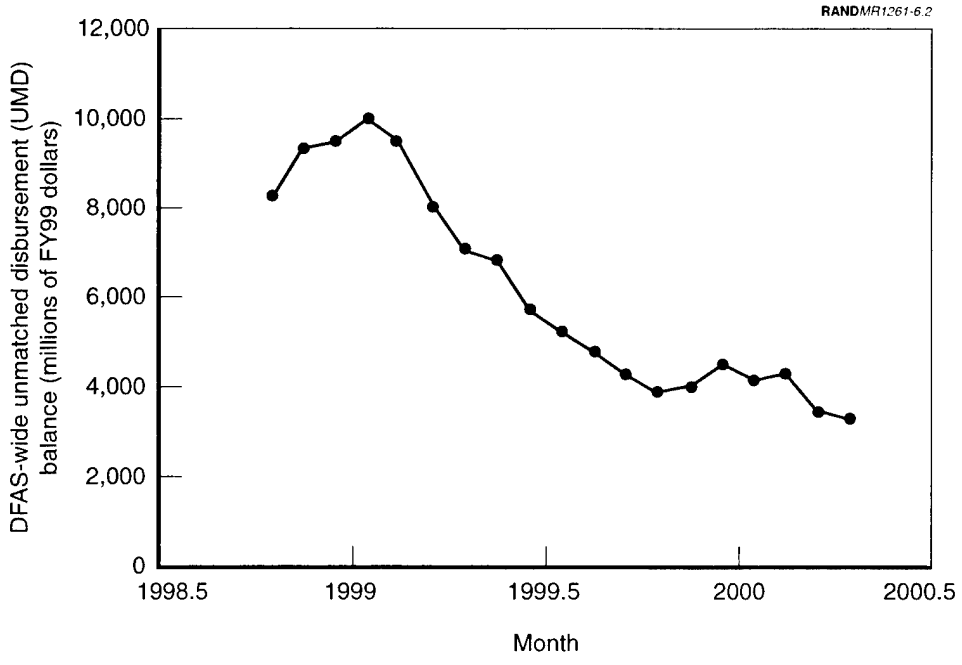

Figure 6.2—DFAS-wide Unmatched Disbursement (UMD) Balance

We understand that problem disbursements do not generally represent fraud or large-scale incorrect payments to contractors.[4] Their most destructive effect, instead, appears to be to muddle customers' true patterns of obligation and disbursement. For that reason, they encumber the efforts of WCF entities to manage themselves.

DFAS Systems Problems

DFAS accounting illustrates systems development and implementation problems DFAS faces across both accounting and finance.

In an extreme example, Fort Bliss personnel noted their problems getting the STARFIARS (Standard Army Financial Inventory Accounting and Reporting System) Mod system to work correctly. STARFIARS Mod is a system that transfers information about customer orders (e.g., when a unit orders a part) into the Army's Standard Financial System. STARFIARS Mod therefore serves as a bridge between the Army's supply and accounting systems.

STARFIARS Mod was implemented at Fort Bliss in July 1998. In September 1998, it was discovered that a software error was leading units at Fort Bliss to believe they had more money than they actually had, so there were serious over-obligations for that two-month period. Units were only being debited for a portion of the orders they had made.

Later, in the fall of 1999, another STARFIARS Mod error was discovered that had not correctly credited the installation when depot-level orders were canceled. The effect of this error was that Fort Bliss had, in fact, under-obligated funds in both FY98 and FY99. Though these software errors are now felt to be resolved, Fort Bliss was obviously disappointed by the quality of the STARFIARS Mod software provided to them by DFAS in July 1998.

Though less colorful than the STARFIARS Mod example, a number of other customers noted various delayed and/or flawed systems implementation efforts, including the Deployed Disbursing System, the Defense Joint Accounting System (DJAS), and the Defense Travel System (DTS), as well as the DIMHRS system mentioned in Chapter 5. Svitak (2000) discusses DTS's problems.

[4] Indeed, a given contractor may have performed and been paid for work and yet still be, completely unbeknownst to itself, the subject of an arduous problem disbursement solution exercise within DFAS and the contractor's customer. As far as we are aware, contractors are not typically responsible for problem disbursements that arise involving their work.

During the summer of 2000, the House Committee on Appropriations voted to remove all funding for DJAS in the FY01 budget. The committee suggested the program had not been properly reviewed nor was it compliant with the requirements of the Clinger-Cohen Act (see U.S. Congress, 2000; Murray, 2000). U.S. Department of Defense, Office of the Inspector General (2000) notes the Clinger-Cohen Act requires DoD to analyze its missions and revise its processes before making significant investments in information technology.

One customer who was generally very positive offered the opinion that system development and implementation is DFAS's single greatest weakness.

There has been extensive private-sector litigation related to software problems not dissimilar from those of STARFIARS Mod. For example, Geyelin (August 8, 1994) and Brandel and Hoffman (1994) discuss the case of NCR's Warehouse Manager software. This software was designed to provide inventory and general ledger services to firms.

Subsequent litigation alleged, however, that the software was deeply flawed. It allegedly contaminated general ledgers with incorrect information and gave inaccurate information about current inventory statuses.

The legal system tends to favor software vendors in this type of dispute; legal damages are often limited to the cost of the flawed system to the customer. However, in the private sector, the real damages presumably lie in the area of shattered reputations and alienated customers.

In Appendix C, we provide more information on the Warehouse Manager case and we discuss other private-sector examples of troubled software.

7. Recommendations

In this report, we have offered insights about DFAS's interactions with its customers. Along with analyzing DFAS data, we have met with disparate DFAS personnel and customers. Based on this information, we make four recommendations to DFAS.

Develop the Capability to Respond to Crises

As noted in Chapter Five, the primary complaints we heard from DFAS appropriated fund customers related to delayed contract and military payments. Maybe these were temporary crises; perhaps we would not have heard about these issues had we visited another time.

A broader lesson from these concerns, we feel, is that DFAS needs to increase its capability to deal with crises and "fight fires." It would be better yet if crises could be averted entirely, but some crises—e.g., responding to large-scale change in the military pay table—are arguably unavoidable. Cross-training more workers to work on different outputs might be a positive step. Robbert, Gates, and Elliott (1997) argue that cross-training and resultant worker flexibility are among the private sector's greatest strengths vis-à-vis the government. DFAS might also establish contracts with private-sector providers like Accountemps to provide surge workforce. In Appendix D, we provide a review of the literature on outsourcing.

Increased cross-training might also expedite the creation of single points of contact for installations. A worker who is cognizant of multiple outputs might be well suited for such a position. One installation point of contact for all outputs might also make it less important to have stability in the workforce that is dedicated to each specific output.

Extend DFAS Pricing Reforms

We feel that DFAS made beneficial pricing changes in FY00. Giving discounts to customers who use more automated processes seems eminently reasonable. We also feel that direct billable hours billing for accounting, while imperfect, is an improvement over monthly trial balance billing. The old approach took no

account of the differing levels of burden imposed by different types of customers, e.g., appropriated versus WCF.

At the same time, there remains room for further improvement. We think DFAS should charge customer-specific prices for each output. In other words, if the Army alone takes steps to simplify DFAS's transportation bill process, the Army alone should benefit from a price decrease. Under the current approach, for most finance outputs, there is a public-good problem whereby a process simplification implemented by a single customer gives every customer a small price decrease.

Reiterating an argument we have made previously (Keating and Gates, 1999), we also urge development of a nonlinear price schedule for DFAS services. DFAS's costs do not increase commensurably with workload, so it would be preferable for DFAS customers to receive, for example, quantity discounts.

DFAS's efforts to respond to the CFO Act could be funded by direct congressional appropriation. Under the current arrangement, customers are forced to pay for a large project they do not value highly.

Consider a Move Toward Commercial Software

Even DFAS's most supportive customers view system development and implementation as a DFAS weak point. Customers cited a litany of delayed systems as well as systems like STARFIARS Mod that, when implemented, were flawed.

We think DFAS needs to seriously evaluate the possibility of buying new systems directly from established commercial sources with limited (if any) modification. Obviously, in light of private-sector problems, DFAS will want to purchase proven, debugged software that is already in wide usage. Bashein, Markus, and Finley (1997) note that even Microsoft chose to purchase financial systems software from SAP, rather than developing it itself.

Of course, steps in this direction may force DFAS customers to move toward less idiosyncratic accounting systems. Such steps may be painful. On the other hand, such steps may expedite DFAS's efforts to respond to the CFO Act. Having fewer systems will also make the employee cross-training we recommended earlier more feasible.

At the same time, acquisition of commercial software will not be a panacea. We were told DTS is a commercial product and it is not trouble free. There may be problems in the system acquisition process that will not be solely addressed by this step.

Make Greater Use of the Web

We think DFAS needs to make greater use of the Web, particularly in rapidly disseminating accounting information.

DFAS has already taken important steps in this direction. See, for instance, Lazorchak (2000).

The Web might address two specific accounting concerns. First, rapid posting of disbursement information in accounting systems on the Web would increase the timeliness and value of DFAS accounting information. Second, such early posting might allow quicker recognition, and hence solution, of data problems. The sooner customers can view their information, the sooner, one hopes, steps can be taken to rectify errors.

Of course, the sensitivity of DFAS's information is such that extreme care must be taken to preserve the security of the system.

Appendix

A. Businesslike Behavior from Defense Working Capital Fund Entities?

In Chapter 6, we discuss WCF entities and how they are supposed to operate "like businesses." In this appendix, we present background on this argument and also note why we think such an expectation is inappropriate under current regulations.

WCF entities such as DFAS were previously part of the Defense Business Operations Fund (DBOF). DBOF was later renamed the Defense Working Capital Fund (DWCF). According to DBOF's Milestone II Implementation Report (U.S. Department of Defense, 1993), "the fund provides the mechanism for establishing a businesslike corporate approach." Also, "revolving fund support activities provide support services to the operational forces much like any large business in the private sector."

Reinforcing this "businesslike" image, DFAS's director (as well as those of other DWCF entities) has, in recent years, signed a "contract" with the Defense Management Council, an oversight board. The contract sets performance standards for DFAS—e.g., average cost per work unit maximums, responsiveness and accuracy stipulations. (DFAS's PMIS data fields were chosen based on the stipulations placed in its "contract.")

The DBOF motivations and DWCF contracts notwithstanding, we believe it is misleading to suggest DWCF entities such as DFAS can operate "like businesses." There are a number of important deviations from a "business" paradigm.

First, under current regulations, DFAS is forced to use linear pricing. Revenue increases commensurate with workload. However, as we showed in our prior research (Keating and Gates, 1999), DFAS's cost structure shows invariance to both workload increases and workload decreases. A private-sector firm with such a cost structure would doubtlessly use nonlinear pricing; e.g., it would give customers quantity discounts as marginal cost is less than average cost. Under current DWCF regulations, nonlinear pricing is not generally allowed.

Second, DWCF entities such as DFAS have no access to external funding sources. All funding comes directly from customers. This lack of external funding has

important and adverse ramifications. For example, a private-sector firm with access to external capital markets can much more credibly offer customers "deals." A private-sector firm can make a promise to customers that, in the limit, is backed up by the full pool of capital the firm can access (up to the point of bankruptcy)—e.g., bond issuance, funding from shareholders.

By contrast, a DWCF entity has a hard time credibly promising anything. Suppose, for instance, DFAS offered a customer a price break in exchange for switching to a consolidated accounting system. If DFAS's costs did not fall as much as anticipated, DFAS could not easily make good on its promise because it has no easy way to cover its costs except by charging customers. It is therefore probably no coincidence that several score different accounting systems remain across DFAS.

Similarly, in reference to the Chapter Five discussion of penalties, it would not be sensible to propose that DFAS pay interest penalty payments, even if the delays are DFAS's fault. Where would those funds ultimately come from except directly back from the customers themselves? DFAS does not have a profit fund to draw down and it does not have external funding sources.

Asking DFAS to pay interest penalty payments would be worse than the current approach, to the extent customers are partially to blame for their interest penalty payments. Under a "DFAS pays" regime, all DFAS customers would, de facto, pay proportional shares of interest penalty payments. Under the current regime, those customers with disproportionate penalty payments pay disproportionately. The current regime has better incentive characteristics to encourage customers to take steps to reduce their penalty payments.

Another deviation from the "businesslike" paradigm lies in the relative inability of customers to leave DFAS or vice versa. Private-sector firms can lose business if they perform inadequately. They can also shed problematic customers.

Real businesses also face potential failure if they do not perform adequately. DWCF entities do not generally have the possibility of such an adverse outcome as a motivator. We also note there are no specified sanctions in case a DWCF entity fails to uphold its "contract" with the Defense Management Council.

A further complication is that DWCF entities are subject to civil service and base closure regulations. They cannot reduce or increase their workforces easily or quickly because of myriad regulations covering government-employed civilians (see Robbert, Gates, and Elliott, 1997). Also, DWCF entities cannot close facilities over a low size threshold without congressional notification. As a practical

matter, DWCF entities will need a renewed BRAC process to meaningfully reduce infrastructure.

In short, DWCF entities such as DFAS operate under a variety of constraints real businesses do not face. Therefore, businesslike behavior from DWCF entities should not be expected.

B. Financial Accounting, Managerial Accounting, and the Chief Financial Officers Act

The Chief Financial Officers Act of 1990 has far-reaching purposes. It seeks to

- bring more effective general and financial management practices to the federal government;
- improve systems of accounting, financial management, and internal controls; and
- provide for the production of complete, reliable, timely, and consistent financial information.

To implement these purposes, Title III, Section 303 of this legislation calls on agencies to produce financial statements. (Table 6.1 highlights the three titles of the legislation.) These financial statements are to reflect

- the agency's overall financial position including assets and liabilities
- results of operations;
- cash flows; and
- a reconciliation to budget reports.

Section 304 of the legislation calls on the agencies to have their statements audited.

Our interpretation of this legislation suggests it draws upon (and perhaps excessively intertwines) financial accounting and managerial accounting.

Financial accounting is defined as "measuring and recording business transactions and providing financial statements that are based on generally accepted accounting principles. It focuses on external reporting." (All definitions in this appendix are from Horngren, Foster, and Datar, 2000.) The object of financial accounting is to assist accountants in their stewardship function: the safeguarding of the organization's assets. The central outputs of financial

accounting are audited financial statements such as balance sheets and income statements. Financial accounting is oriented toward providing information to individuals outside the firm, e.g., prospective shareholders.

By contrast, managerial accounting "measures and reports financial and nonfinancial information that helps managers make decisions to fulfill the goals of an organization. It focuses on internal reporting." The tools used by managerial accountants to achieve their goal of decision support are such things as budgets, activity-based costing (ABC) and financial planning. Managerial accounting is designed for internal use by a firm's managers.

Neither financial nor managerial accounting is a subset of the other. They each have a distinct purpose and audience. Financial accounting reports are meant to give capital providers a means of assessing how well that capital has been used. As such, they are backward-looking, based on historical accounting data and designed to provide a broad assessment of organizational performance. In the private sector, generally accepted accounting principles have been developed and are required to ensure consistency in reporting across organizations.

By contrast, managerial accounting, with its focus on decision support, is forward-looking. Given the dynamic and idiosyncratic needs of its audience of operational managers, there are no codified rules in managerial accounting. But many tools have been developed that have proved useful in decision support, such as ABC and capital budgeting.[1]

Costing is another major area of difference between financial and managerial accounting. Accurate costing all the way down to the product, unit, service, or activity level is a prerequisite for effective decisionmaking and efficient resource allocation. But in aggregate financial reporting, only the totality of expenses is needed to calculate net income and so accuracy at the product or activity level is irrelevant: After costs have been incurred, the totals remain the same however costs are allocated.

Most organizations need to have both an internal and an external focus and so must pay attention to the adequacy of both their financial and managerial accounting systems. However, often the demands of external capital providers speak louder than the needs of internal managers, a phenomenon exacerbated by the concentration of the training most accountants have in financial accounting

[1] Horngren, Foster, and Datar (2000) define activity-based costing as an approach to costing that focuses on individual activities as the fundamental cost objects. It uses the costs of these activities as the basis for assigning costs to other cost objects such as products or services. Capital budgeting, meanwhile, refers to the making of long-term decisions for investments in projects and programs.

over managerial accounting. This creates a cycle in which managers do not demand better decision support from their accountants, because they are skeptical as to whether accountants understand their needs or are capable of meeting them.

The Certified Public Accountant (CPA) exam has a very limited emphasis on managerial accounting. According to the Web site of the American Institute of Certified Public Accountants, only about 10 percent of the CPA exam deals with managerial accounting. See Table B.1.

The rise of ABC in the private sector in the late 1980s shifted the focus to managerial accounting and the need for accountants to become team players in decisionmaking. But given their training, there is a strong force driving accountants toward financial accounting over managerial accounting unless there is an equally strong countervailing culture emphasizing the importance of accounting for decision support.

Given this background, we see that the purposes of the CFO Act encompass both financial ("provide for the production of complete, reliable, timely, and consistent financial information") and managerial ("bring more effective general and financial management practices to the federal government") accounting.

At the same time, the Title III stipulations of the Act focus disproportionately on financial accounting statements (balance sheets, cash flows, reconciliations). It is not surprising, therefore, that DFAS's efforts to respond to the Act have been primarily in the realm of financial accounting. Indeed, the challenges in this vein have been considerable. DoD entities traditionally never thought in terms of assets, liabilities, and balance sheets, for instance. Interest in revenues and costs largely has been limited to WCF entities. Appropriated fund entities have focused on their expenditure patterns.

Table B.1

Content Specifications of the CPA Exam

Category	Weight
Federal taxation—Individuals	20%
Federal taxation—Corporations	20%
Federal taxation—Partnerships	10%
Federal taxation—Estates and trusts, exempt organizations, and preparers' responsibilities	10%
Accounting for governmental and not-for-profit organizations	30%
Managerial accounting	10%

SOURCE: http://www.aicpa.org, accessed September 15, 2000.

We note with concern, however, that accurate financial accounting is perhaps a necessary, but nowhere near a sufficient, condition for effective management. Many bankrupt companies, for example, issue financial statements that have been fully approved by their auditors right until the day on which they close their doors. No company can exist if it does not keep track of where its assets are and how they are consumed. But also, no company can succeed if it does not make correct decisions about how to make use of those resources. It is managers who are tasked with making those resource allocation decisions, and managerial accounting provides them with the information necessary for such decisions to be made in an informed and optimal fashion.

Over the last two decades there has been a change in the comparative emphasis in private-sector accounting, away from the stewardship role toward decision support, as it has become evident that the former is necessary but not sufficient for effective management.

C. Private-Sector Software Challenges

Faulty software can be immensely consequential to both the provider and recipient. This review addresses software malpractice in recent years, briefly surveying some of the problems companies have had with purchased software, suits that have been filed, and the outcomes or settlements of some of these suits. This appendix was motivated by problems Fort Bliss experienced with the STARFIARS Mod software provided to them by DFAS.

Problems

Many companies have had problems when upgrading computer systems or software (Daniels, 1999). Record-keeping software, if flawed, can create immense problems, and possible remedies to these problems are often very limited (Geyelin, August 8, 1994).

The case most similar to STARFIARS Mod that we found was NCR's Warehouse Manager. In addition to basic system operating problems, such as system "lock-ups" or interminably long waits between entry functions, the system allegedly corrupted data. Burgman Industries reported that Warehouse Manager scrambled prices; a machine part that had cost $114 was listed for sale at 54 cents (Geyelin, August 8, 1994). In 1989, after installing Warehouse Manager, employees of Hopper Specialty hand counted every item in the building six times during a two-month period, only to find the tally didn't match what NCR's computer said was there (Geyelin, August 8, 1994). By early 1991, Hopper Specialty called in its outside accounting firm to try to straighten out its books. Warehouse Manager, it was alleged, had randomly erased information that fed into the firm's general ledger (Geyelin, August 8, 1994). Another NCR customer, E. Kinast Distributors Inc., was unable to place a purchase order in the five weeks after it had switched over to Warehouse Manager, and estimated the backlog cost them $2,000 per day (Geyelin, August 8, 1994).

Lawsuits

Problems of the sort alleged result in considerable damage to the affected businesses, and often result in lawsuits. Allegedly because of Warehouse Manager problems, Hopper Specialty's then $4 million business dwindled to

$1 million in annual sales. Hopper sought $4.2 million in lost profits plus the cost of the system, which he placed at $250,000 to $300,000 (Brandel and Hoffman, 1994). Hopper was not alone: Of the roughly 40 Warehouse Manager systems sold, at about $180,000 each, not one ended up working as promised, it was alleged. More than two dozen lawsuits, including one filed by Hopper, have resulted (Geyelin, August 8, 1994).

Warehouse Manager was not a unique case. Clothier Hartmarx Corp., based in Chicago, took a $6.9 million write-off to scrap its information technology overhaul and sued software provider JBA International Inc. to recover damages (Daniels, 1999). Bankrupt Fox Meyer Corp. is looking to recoup $500 million from Andersen Consulting, which it is suing for a botched software implementation that Fox Meyer says contributed to its downfall (*ComputerWorld*, 1998). GTE Products Corp. filed a lawsuit against American Software Inc., charging that serious bugs in its software nearly caused GTE to abandon a major restructuring (Allison, 1991). Tri Valley Growers filed a lawsuit against Oracle Corporation alleging fraud, negligent misrepresentation, malpractice, and breach of contract because the software developer allegedly failed to fulfill its contract and promises to modernize the food company's production and management systems. Tri Valley Growers asked for more than $20 million in damages (Business Wire, 2000).

Claims vary widely, both in damages claimed and in laws under which they seek damages. The charges range from breach of contract to fraud to racketeering under the Racketeer Influenced and Corrupt Organizations Act (RICO). Damages claimed range from the cost of hardware, software, and services ($800,000 for one banking customer) to more than $3 million for one customer filing under RICO (Geyelin, August 8, 1994).

Results

Most software vendors have protection clauses in their agreements that limit damages and liability. AT&T, the parent company of NCR, uses its Universal Agreement—which limits payments to the original cost of the products and services acquired minus depreciation for use of the equipment—in settling its cases (Brandel and Hoffman, 1994). Many agreements have clauses that insist on arbitration instead of court settlement of disputes. Most of the cases mentioned above were settled for undisclosed amounts. The case of *Hopper v. NCR* was ordered into arbitration by the court (Court Record, 1994).

A few of the cases were settled publicly and provide us with some idea of the results. In general, the law seems to favor the vendors' contract limitations on

damages to the cost of products and services, not lost business. The Glovertorium (a leather and suede firm) received $130,000 in punitive damages from Computer Systems Development, Inc., for receiving a nonworking system (Connolly, 1985). A Westchester County, New York, arbitrator ordered NCR to pay Warwick Savings $818,000 in damages following problems the bank suffered during its two-year struggle with NCR banking software in 1988 and 1989 (Brandel and Hoffman, 1994). In other NCR-related litigation, Cambridge Trust Co. of Cambridge, Massachusetts, was awarded $2.4 million in October 1997 (Radigan, 1997).

D. The Literature on Outsourcing

The purpose of this appendix is to provide a review of the recent business literature on outsourcing. One of our recommendations is that DFAS examine the possibility of using contractors to provide surge labor force. This appendix provides relevant background on an approach of that sort.

We also recommend Pint and Baldwin's (1997) more academically focused literature review on this topic.

Outsourcing was one of the major business trends of the 1990s, and remains an important topic. Outsourcing denotes the shift that occurs when a business entity takes work traditionally performed internally and contracts with an external provider for the provision of that work (Economist Intelligence Unit/Arthur Andersen [EIU/AA], 1995). Early outsourced functions were simple activities, such as security and janitorial services, but outsourcing has progressed to include many "higher order" functions including finance functions and even product development and design (EIU/AA, 1995). Basically any function could, hypothetically, be outsourced. One could envision "virtual enterprises" existing as a network of partners and allies, each a specialist in their respective areas, reliant on each other for the provision of all essential functions (EIU/AA, 1995).

One particularly germane outsourcing experience is that of the Armed Forces Personnel Administration Agency (AFPAA), which is a tri-service agency of the British Ministry of Defence, responsible for the full range of pay, pensions, and personnel administration services for the Armed Forces. They arranged an outsourcing/partnership arrangement with Electronic Data Systems that went into effect on January 1, 1998. In their first year of partnership, while they did encounter some troubles, they were able to meet most of the initial service goals, and surpassed previous service levels significantly in virtually all areas (AFPAA Annual Report, 1997–1998). Pomroy (1999) also discusses this transition.

Discussions of outsourcing tend to contain one or more of three main topics: (1) advantages of outsourcing; (2) barriers or disadvantages to outsourcing; and (3) notes of caution or advice for the planning or implementation of outsourcing.

Advantages to Outsourcing

The principle benefit of and reason to outsource is that it allows a firm to focus its activities on its core competency (Petrie, May 22, 2000; EIU/AA, 1995). Simultaneously, the firm outsourced *to* will be acting in its core competency. That provider firm brings a number of advantages to the performance of its task including access to state-of-the-art technology; economies of scale with regard to hardware, software, and personnel; and aggressive use of low-cost labor pools (Antonucci, Lordi, and Tucker, 1998; Petrie, May 22, 2000; EIU/AA, 1995). The outsourcing firm focuses on broader business issues, or maintains a clearer strategic focus, while operational details are assumed by an outside expert (Petrie, May 22, 2000; EIU/AA, 1995).

Outsourcing can deliver considerable savings on office space, general overhead, company cars, pensions, insurance, and salaries (Petrie, May 22, 2000).

Since it is their core competency, providers are more likely to remain abreast of technological innovations in their field. The outsourcing firm then gains easier access to expertise and new technological developments (EIU/AA, 1995). Providers can be more flexible with regard to workload than an in-house process; this can allow a firm to turn a fixed cost into a variable cost through outsourcing (Petrie, May 22, 2000). Providers are more inclined to be flexible because of their customer/supplier orientation, an orientation that may well be absent in an in-house arrangement (EIU/AA, 1995).

In summary, outsourcing is thought to be beneficial because of economies of scale, improved access to new technology, and the flexibility inherent in the outsourcing relationship.

Disadvantages to Outsourcing

Most of the literature is fundamentally in favor of outsourcing, but several possible problems or concerns are discussed.

The concern universally given the most weight is the possible damage to company morale from outsourcing (Petrie, May 15, 2000; Antonucci, Lordi, and Tucker, 1998; EIU/AA, 1995). If savings are to be realized, personnel from outsourced functions will be dismissed or transferred to the provider firm, and personnel in potentially outsourced functions will respond adversely.

Outsourcing firms fear losses in other areas as well. The nature of outsourcing creates a dependence on the provider firm, with a consequent loss of independence (Petrie, May 15, 2000; Antonucci, Lordi, and Tucker, 1998). The

outsourced department is no longer readily available for use in management training, preventing the creation of easy familiarity with that function (Petrie, May 15, 2000; EIU/AA, 1995).

A number of concerns relate to the nature of the outsourcing relationship. First, there is a concern that, over time, outsourcing providers will demand ever great premiums (EIU/AA, 1995). Having abandoned the internal function, firms will have no choice but to pay these increased premiums. There is also a concern that the provider will not understand a firm's core business needs sufficiently, or the specific demands of the business environment (Petrie, May 15, 2000; EIU/AA, 1995). In opposition to the asserted flexibility advantage, there is a concern that contracts might actually decrease flexibility, and that provider personnel might be less responsive than internal staff (Antonucci, Lordi, and Tucker, 1998). Finally, there is a concern about lack of long-term vision or loyalty from providers, especially on a short-term contract (Petrie, May 15, 2000; Antonucci, Lordi, and Tucker, 1998).

Suggestions for Outsourcing

Many of the discussions of outsourcing contain explicit suggestions regarding how to proceed when considering outsourcing. Frieswick (1998) urges careful consideration of the actual in-house costs versus the outsourced costs, keeping in mind the many factors that contribute to in-house costs, including infrastructure costs, software, training and recruitment, salary, maintenance, and the opportunity costs of implementation. He further suggests caution in the initial engagement, urging the creation of an outsourcing request for proposals detailing exactly what is desired, including the requirements in complete and measurable terms, the relationship sought, the problems to be solved, the service level required, and the current costs.

The joint EIU/AA (1995) report on strategic outsourcing suggests five steps to successful strategic outsourcing:

1. Identify core competencies. They note that the division between core and noncore is not always completely clear. They also note the differing perspectives of different levels of management and in different departments. They caution that there is a tendency for section managers to want to outsource "anything below me." (p. 18)

2. Evaluate opportunities. They advocate careful consideration of all functions and the possibility of outsourcing them. They suggest prioritization of existing functions using a graph of quality versus cost. Functions performed by the firm

that are high quality but low cost should not be outsourced; functions that are low quality but high cost are prime candidates.

3. Select supplier. They note a tension between hiring a vendor or a strategic partner. They suggest identification of the better choice based on the following dichotomies: Is the scope simple and well-defined (vendor), or dynamic (partner)? Easy transition (vendor) or difficult (partner)? Remote (vendor) from core business or proximate (partner)?

4. Organize the transition process. They caution that the outsourcing process does not end with the decision to outsource, and note that many of the possible disadvantages of outsourcing, such as loss of morale, can be mitigated through a carefully organized transition.

5. Monitor and evaluate performance. They point out that outsourcing, especially strategic outsourcing with partners, is an ongoing process that can be improved and refined. To make those improvements, evaluation information is required.

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